

Preparation of 2000 Labor Force Participation Rate.

The Demography Office uses the labor force as the main variable relating Colorado's population to its economy. This section of the document describes the methods by which the Office prepares detailed labor force participation rates by age, gender, and region.

The labor force participation rate described in this text is the civilian labor force, those persons either working (employed) or actively looking for work (unemployed), as a percentage of the adult civilian non-institutional population.

The Bureau of Labor Statistics estimates of employment and unemployment are the official estimates for Colorado and the Nation. These estimates are derived from the Current Population Survey (CPS). However, there are only X,XXX households in Colorado included in the survey at any one time. So while the estimate for the U.S. has a sufficient sample size to produce reliable estimates of the labor force, the estimates for sub regions of Colorado are not a reliable indicator of the level of labor force participation or its change from year to year.

Other sources of information on the labor force are collected and released by the U.S. Bureau of the Census. The Census 2000 was designed to collect general information about the labor force from very small geographic areas on a one-time basis. Employment and unemployment data from the Census will be different from those collected by the CPS for many reasons including design of the questions asked, collection methods, and collection dates, however, the magnitude of the difference between the two estimates was larger in the year 2000 than in any other previous census. The Census 2000 estimate of labor force participation for the U.S. was 2.1 percentage points lower than the CPS estimate, the employed persons estimate was 5 percent lower, and the estimate of the number of unemployed persons was over 50 percent higher. The magnitudes of differences were similar for the estimates prepared for Colorado. The Census 2000 estimate of labor force participation for Colorado was 1.9 percentage points higher than the CPS estimate, the employed persons estimate was 1 percent higher, and the estimate of the number of unemployed persons was almost 40 percent higher.

The reasons for the differences between the estimates are numerous and include reference date, questions asked, etc. However, a study conducted by the Census Bureau did determine that the Census estimates while not of the correct level, do successfully represent the relationships between age, sex, and geographic areas of labor force participation¹. Therefore, the need for labor force participation rates by detailed age group by sub-state area dictated that we use

¹ The report *Comparing Employment, Income, and Poverty: Census 2000 and the Current Population Survey* produced by the U.S. Bureau of the Census is available at <http://www.census.gov>.

information from both surveys to derive the estimates finally used to prepare labor force participation forecasts for this publication.

The rates were initially prepared for 9 regions of Colorado. These regions are comprised of counties with socioeconomic similarities and similar participation in the labor force. These regions were also chosen to maximize the benefits of the Census Bureau Public Use Microdata Sample data.

As mentioned earlier, labor force participation is limited to the civilian labor force, those persons either working (employed) or actively looking for work (unemployed), as a percentage of the civilian non-institutional population. For example the participation rate for Males ages 25 to 29 would be derived using the following equation:

$$CivLFPR_{Male25-29} = \frac{CensusEmp_{Male25-29} + BLSunemp \times \left(\frac{CensusUnemp_{Male25-29}}{CensusUnemp_{total}} \right)}{CensusPop_{Male25-29} - CenInstPop \times \left(\frac{CenRegionInst_{Male25-29}}{CenRegionInst_{total}} \right)}$$

where:

CivLFPR = Region civilian non-institutional labor force participation rate.

CensusEmp = Census region employment.

BLSunemp = BLS region total unemployment estimate.

CensusUnemp = Census region unemployment.

CensusPop = Census region population.

CensusInstPop = Census region institutional population.

CensusRegionInst = Census region institutional population.

The region, age, and gender specific participation rates are then applied to county non-institutional population totals by age and gender to derive the county labor force estimate. The county labor force estimates are then adjusted from the date of the Census (April 1) to an annual average using a seasonal adjustment for purposes of comparison with U.S. BLS rates. County age and gender specific labor force participation rates are then derived.